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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

April 25, 2007

Mr. Keith A. Klein, Manager
Richland Operations Office
United States Department of Energy
P.O. Box 550, MSIN: A7-50
Richland, Washington 99352

Re: Determination of Complete Application, 100B Export Water Enhancements

Reference: USDOE-RL Letter 07-SED-0216, *Transmittal of Two Regulatory Documents for Review and Approval Related to Proposed Hanford Facility Project 100B Export Water Enhancements (Project L-626)*, dated April 10, 2007 0072671

Dear Mr. Klein:

Ecology finds the Notice of Construction you recently submitted complete. Your notice meets the requirements in Washington Administrative Code (WAC) Chapters 173-400 and 173-460. Enclosed is a copy of the anticipated ORDER to authorize you to proceed with the proposed project.

Your project involves the installation of emergency use diesel engines. The "emergency use" designation of the engines is a voluntary restriction (WAC 173-400-091). This restriction will avoid the provisions for the Prevention of Significant Deterioration (WAC 173-0400-700 *et seq.*). Before we approve your Application, we will hold a 30-day public notice and comment period required by WAC 173-400-171(2)(a)(x). The public comment period will start May 14, 2007.

If you have questions, please call me at 509-372-7983.

Sincerely,

Doug Hendrickson, P.E.
Lead Air Engineer
Nuclear Waste Program

pll
Enclosure

cc: See next page

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Mr. Keith A. Klein
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cc: Mary Jarvis, USDOE
Tom Beam, FH
Curt Clement, FH
Stuart Harris, CTUIR
Gabriel Bohnee, NPT
Russell Jim, YN
Susan Leckband, HAB
Ken Niles, ODOE
John Martell, WDOH
Administrative Record: AIR Permits *H-0-9*
Environmental Portal

AIR EMISSIONS
NOTICE OF CONSTRUCTION APPROVAL ORDER
CONDITIONS AND RESTRICTIONS

REGULATORY AUTHORITY:

Pursuant to the Washington State Department of Ecology *General Regulations for Air Pollution Sources*, Chapter 173-400 Washington Administrative Code (WAC), *Controls for New Sources of Toxic Air Pollutants*, Chapter 173-460 WAC, and New Source Performance Standards (NSPS) promulgated under Subpart IIII (Title 40 Code of Federal Regulations (CFR), Part 60.4200 *et. seq.*), and WAC 173-400-091, specifically, Ecology finds the following:

FINDINGS:

1. The United States Department of Energy proposes to modify their existing facility (Hanford) located in Richland, Washington.
2. A Notice of Construction (NOC) application was submitted on April 10, 2007. The application was found to be complete on April 23, 2007.
3. Hanford is an existing major stationary source that emits more than 250 tons of a regulated pollutant per year.
4. The proposed project consists of installing and operating three diesel engines to pump water and installing up to two diesel fuel storage tanks in the 100B Area of the Hanford Site. The water is intended for potable, process, and fire suppression uses.
5. The proposed project will install the three diesel engines as emergency use engines subject to Subpart IIII New Source Performance Standards of 40 CFR 60.4200 *et seq.*
6. Hanford is located in a Class II Area designated as "attainment" for the purpose of NOC permitting for all pollutants.
7. Emissions of criteria pollutants from the proposed project are below the Prevention of Significant Deterioration Significant Emission Rates.
8. Criteria air pollutant emissions from the proposed project are below the *de minimus* levels in WAC 173-400-110(5)(d) with the exception of nitrogen oxides.
9. Toxic Air Pollutants (TAPs) from the proposed project are below the Small Quantity Emission Rates (SQERs) of WAC 173-460-080(2)(e).
10. The Best Available Control Technology (BACT) and Toxics-Best Available Control Technology (T-BACT) for this project have been determined to be the use of 40 CFR Part 89 compliant engines.
11. The proposed project, if constructed and operated as herein required, will provide BACT and T-BACT.

12. The proposed project, if operated as herein required, will be in accordance with applicable rules and regulations, as set forth in Chapter 173-400 WAC, Chapter 173-460 WAC, and NSPS Subpart IIII and the operation thereof will not result in ambient air quality standards being exceeded.

13. The project will have no significant impact on air quality.

THEREFORE, IT IS ORDERED that the project as described in said NOC application, and as detailed in emission estimates, and impact and control technology assessments submitted to Ecology in reference thereto, is approved for construction, installation, and operation, provided compliance with the conditions and restrictions described below. This ORDER will be identified as NOC ORDER **DE07NWP-002**.

1.0 SPECIFIC APPROVAL CONDITIONS

1.1 Effective Date

The effective date of this authorization will be that as signed in Section 3.0. All references to standards, procedures or test methods will be to those in effect as of the effective date of this ORDER.

1.2 Emission Limits

- 1.2.1 Visible emissions will not exceed 20 percent [WAC 173-400-040(1), 40 CFR 60.4205(b), and 40 CFR 89.113(1)].
- 1.2.2 Emissions of Nitrogen oxides (NO_x) and Non-methane Hydrocarbons (NMHC) will not exceed 14.3 tons per year.
- 1.2.3 Emissions of Carbon Monoxide (CO) will not exceed 5.0 tons per year [WAC 173-400-110(5)(d)].
- 1.2.4 Emissions of particulate matter (PM) will not exceed 0.75 tons per year [WAC 173-400-110(5)(d)].
- 1.2.5 Emissions of Toxic Air Pollutants (TAPs), as identified within Table 1, will not exceed SQERs of WAC 173-460-080(2)(e).

Table 1: Project TAP SQERs

Pollutant	Chemical Abstracts Service Registry Number	TAP Class	SQER	
			Lb/yr	Lb/hr
Benzene	71-43-2	A	20	
Toluene	108-88-3	B		5
Xylene	1330-20-7	B		5
1,3-Butadiene	106-99-0	A	0.5	
Formaldehyde	50-00-0	A	20	
Acetaldehyde	75-07-0	A	50	
Acrolein	107-02-8	B		0.02
Napthalene	91-20-3	B		2.6

- 1.2.6 Emissions of Polyaromatic Hydrocarbons (PAHs) will not result in ambient concentrations exceeding $4.8\text{E-}03 \mu\text{g}/\text{m}^3$ [WAC 173-460-080(3)].
- 1.2.7 Emissions of sulfur dioxide (SO₂) will not exceed 2.0 tons per year [WAC 173-400-110(5)(d)].

- 1.2.8 Emission rates of engines installed under this Order shall not exceed values identified in Table 2 [40 CFR 60.4205(b) and 40 CFR 89.112].

Table 2: Engine Emission Rate Limitations

Pollutant	Engine Rating	gram/kilowatt-hour (g/kW-hr)	pound/horsepower-hour (lb/HP-hr)
Carbon Monoxide	130≤kW≤560 (174≤HP≤751)	3.5	5.8E-03
Particulate Matter	130≤kW≤560 (174≤HP≤751)	0.2	3.3E-04
Nitrogen Oxides	130≤kW≤560 (174≤HP≤751)	4.0	6.6E-03
	kW>560 (HP>751)	6.4	1.1E-02

1.3 Compliance Demonstration

- 1.3.1 Compliance with Approval Condition 1.2.1 will be met by Tier 1 Visible Emissions Survey requirements of the Hanford Air Operating Permit.

- 1.3.2 Compliance with Approval Conditions 1.2.2, 1.2.3, and 1.2.4 will be demonstrated by:

1.3.2.1 Engine Limitation

- 1.3.2.1.1 Installation of engines certified to meet emission limitations of 40 CFR Part 89 [40 CFR 60.4211(c)].
- 1.3.2.1.2 Installation of one engine rated no higher than 450 horsepower (HP) and two engines rated no higher than 900 HP.

1.3.2.2 Operational Limitation

- 1.3.2.2.1 All recommended operation and equipment maintenance provisions supplied by the manufacturer(s) of the engine(s) will be current [40 CFR 60.4211(a)].
- 1.3.2.2.2 Operational monitoring in accord with Approval Condition 1.5.
- 1.3.2.2.3 Operational hours of use for each engine under this ORDER, for purposes of maintenance checks and readiness testing shall not exceed 100 hours per year unless approved by the Administrator of the United States Environmental Protection Agency [40 CFR 60.4211(e)].
- 1.3.2.2.4 Operational hours of use during emergency conditions shall not be limited provided maintenance of records of emergency use defined in Approval Condition 1.6.

- 1.3.2.3 Compliance with Approval Condition 1.2.5 will be demonstrated by calculation of Toxic Air Pollutant emissions, employing air pollutant emission factors of AP 42¹, Table 3.3-2.

- 1.3.3 Compliance with Approval Condition 1.2.6 will be demonstrated by:

- 1.3.3.1 Compliance with Approval Condition 1.3.2.3 OR

¹ AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, <http://www.epa.gov/ttn/chief/ap42/index.html>

- 1.3.3.2 Calculation of Toxic Air Pollutant emissions, employing PAH air pollutant emission factors of AP 42, Table 3.3-2, and dispersion analysis.
- 1.3.4 Compliance with Approval Condition 1.2.7 will be demonstrated by use of fuel containing:
 - 1.3.4.1 No greater than 0.05 weight percent sulfur (500 parts per million by weight) from installation to May 30, 2010 [40 CFR 60.4207(a)].
 - 1.3.4.2 No greater than 0.015 weight percent sulfur (15 parts per million by weight) on and after June 1, 2010 [40 CFR 60.4207(b)].
- 1.3.5 Compliance with Approval Condition 1.2.8 shall be demonstrated by:
 - 1.3.5.1 Procuring and installing only engines certified to emission standards of 40 CFR 60.4205(b) for the same model year and maximum engine rating [40 CFR 60.4211(c)].
 - 1.3.5.2 Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer [40 CFR 60.4211(a)].
 - 1.3.5.3 Installing and configuring the engines according to manufacturer specifications [40 CFR 60.4211(c)].
 - 1.3.5.4 Maintaining records of engine certification as detailed in Approval Condition 1.6 [40 CFR 60.4211(c)].

1.4 Manuals

Operations and Maintenance (O&M) manuals for all equipment, procedures, and controls associated with the proposed activities that have the potential to affect emissions to the atmosphere will be followed. Manufacturer's instructions may be referenced but must be adhered consistent with Approval Condition 1.3.5.2. The O&M manuals will be updated to reflect any modifications of the process or operating procedures. Copies of the O&M manuals will be available to Ecology upon request.

1.5 Monitoring

A non-resettable hour meter will be installed and operated on each engine approved under this Order [40 CFR 60.4209(a)].

1.6 Recordkeeping

Specific records will be kept on the Hanford Site by the Permittee and made available for inspection by Ecology upon request. The records must be organized in a readily accessible manner and cover a minimum of the most recent 60 month period, except when otherwise specified. The records to be kept must include the following:

1. Visual Emission surveys conducted pursuant to Approval Condition 1.3.1.
2. Manufacturer's engine certifications, required by Approval Conditions 1.3.2.1.1 and 1.3.5.1 will be retained from initial use through the ten year life of the engines [40 CFR 1039.101(g)(1)].
3. Maintenance records for maintenance conducted pursuant to Approval Condition 1.3.2.2.1.
4. Thirty-six month cumulative operating hours for each engine, calculated semi-annually.
5. Calculations prepared pursuant to Approval Conditions 1.3.2.3 and 1.3.3.
6. Vendor's certification for diesel fuel quality for all purchases pursuant to Approval Condition 1.3.4.

7. Records of emergency use operational duration and the basis of the emergency.

2.0 NOTIFICATIONS AND SUBMITTALS

2.1 Addressing

Any required notifications and reports required under these Approval Conditions must be sent to:

Washington State Department of Ecology
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, Washington 99354

2.2 Operational Notice

Operational notification will be made within 30 days following initial startup of the engines covered by this ORDER.

2.3 Reporting

Visible emission surveys, when conducted pursuant to Compliance Demonstration requirement 1.3.1 **Error! Reference source not found.**, shall be submitted to Ecology in accord with WAC 173-400-107 with an assessment of the cause of visible emissions and a report of the actions taken to prevent further excess visible emissions.

Emissions will be compiled into estimates and reported annually, beginning as part of the calendar year 2007 non-radioactive inventory of airborne emissions, pursuant to WAC 173-400-105.

3.0 APPROVAL ORDER AND RESTRICTIONS

This Authorization may be modified, suspended, or revoked in whole, or in part, for cause including, but not limited to, the following:

1. Violation of any terms or conditions of this authorization.
2. Obtaining this authorization by misrepresentation, or failure to fully disclose all relevant facts.

The provisions of this authorization are severable. If any provision or application of any provisions of this authorization is held invalid, the application of such provision to their circumstances, and the remainder of this authorization, will not be affected thereby.

Any person aggrieved by this ORDER may obtain review thereof by application, within 30 days of receipt of this ORDER, to:

Pollution Control Hearings Board
P.O. Box 40903
Olympia, Washington 98504-0903

Concurrently, copies of the application must be sent to:

Washington State Department of Ecology
P. O. Box 47600
Olympia, Washington 98504-7600

Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

These procedures are consistent with the provisions of Chapter 43.21B RCW, and the rules and regulations adopted thereunder.

DATED at Richland, Washington, this xxth day of May 2006.

REVIEWED AND PREPARED BY:

Doug Hendrickson, P.E.

APPROVED BY:

Jane A. Hedges
Program Manager
Nuclear Waste Program
Washington State Department of Ecology